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RHEUMATISMUS, OR RHEUMATISM.

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[Reported for the Medical Examiner.]

It was remarked, on a preceding occasion, that the term arthritis embraced, originally, every inflammation of the joints, however differing in their causes or nature. But in the process of time, it came to be restricted to gout, exclusively, and that of rheumatismus, or rheumatism, was invented to designate another affection, having an analogy to, though not believed to be identical with it, which is now presented for consideration. Exactly the same objection applies to this term as to that of gout, each proceeding from a crude and erroneous pathological view. The derivation of the former has been given, and the latter comes from *rheuma*, a peculiar sort of humour, which, as was thought, being distilled into the joints, irritated them into inflammation. Exposed to the "peltings of the pitiless storm," old Lear, among other infirmities, is made to complain of "joint racking rheums." The credit of separating the two diseases, as specifically different, has been generally accorded to Sydenham, though without justice. Expressive of a morbid state of action, contradistinguished from that of arthritis, the term rheumatismus first occurs in Ballonius's treatise, "*De Rheumatismo, et Pleuridite Dorsali*," printed in 1642.

Like gout, this disease exhibits a great variety of aspects. The common nosological division of it is into acute and chronic, these being its leading and conspicuous states: and from its appearing, either in the joints or muscles, it has lately been subdivided into articular and muscular. Not embracing, however, the whole of the fibrous tissue, the term articular is defective. The disease, too, attacks the interior as well as the exterior of the body, no one of the contents of the great cavities, indeed, having a congenial texture, escaping. An adequate exposition of the disease, therefore, requires it to be presented in all these views, and each designated by some appropriate title. By far a better arrangement than any hitherto suggested, would be into fibrous and muscular rheumatism, each of which species to be considered in its acute, sub-acute, and chronic states, it being easy to bring under these heads every modification of the disease.

Of the varieties of rheumatism, the articulo-fibrous is the most common, and its principal seats are the large joints, one or more simultaneously affected, the shoulder, elbow, wrist, the knee and ankle, the fingers and toes being rarely implicated, though I have met with such instances.

By an accurate observer, we are told that, of an hundred and seventy cases of the disease, which

he had noticed, only nine were exclusively muscular, and in thirty-three more, the muscles were engaged with the joints.*

An attack of acute inflammatory rheumatism may come on very suddenly, or more slowly, with a general soreness or rigidity, or directly by a chill, followed by the usual symptoms of fever, a very full, strong, round, or bounding pulse, hot skin, dry fauces, slightly furred tongue, and considerable thirst. The local affection, in some instances, anticipates the fever, and, perhaps, most commonly, such is the course of the disease. It may then be remarked, that the pain is steadily fixed at one point; whereas, when it is preceded by fever, it is fluctuating, attacking at once several joints, or changing very rapidly, from place to place. The stomach is little troubled, the bowels are constipated, the urine scanty, and very high colored, and without any sediment,—which, however, in the progress of the case, deposits lateritious matter, sometimes proving critical and salutary. The tongue ultimately becomes loaded with a thick, brown, tenacious mucus. Generally, with a tense skin, spontaneous clammy perspiration occurs, never from the part affected, however, having a peculiar acid odor, which, copious as it may be, does not mitigate the paroxysm, or in any way conduce to recovery. The fever is remittent. There is, for the most part, considerable alleviation during the day, with an exacerbation in the evening, attended, in some instances, by a vast increase of suffering, and especially if the patient be covered warmly in bed. This, which is the ordinary character of the disease, is sometimes considerably modified. Contracted in a miasmatic region, the influence of such a position is very discernible. The stomach here is greatly disordered, and copious vomitings of bile are common, the skin and eyes sallow, the tongue early coated with yellowish or brownish fur, the head aches, or is otherwise affected, and the fever is usually of the intermittent type.

In either case, the articular affection is pretty nearly the same, though perhaps less in the latter variety of the disease. The joint is red, tender, and very painful, particularly on motion, and ultimately becomes swollen and edematous, by which very sensible relief is afforded.

Every other portion of the fibrous membrane, however, may be the seat of an attack, even to the sclerotica of the eye, though it chiefly and most prominently occurs in the periosteum, locally, or more generally diffused. The sensation is that of a dull ache, or an acute, pungent, or darting pain, and, from its depth, is referred to the bone. It very often, too, is to be met with in the pericranium, especially on one side of the head, constituting hemicrania, and occasionally in the neurilema or fibrous integuments of the large nerves; the sciatic

* Haygarth's Clinical History of Rheumatism.

mostly, where it is recognised by singularly sharp pain, pursuing the course of the nerve.

Much of the preceding account is equally applicable to myositis or muscular rheumatism. It is, however, more apt to come on suddenly, or without any very significant premonition. Lumbago, especially, I have known to strike, as it were, like an electric shock. Three very remarkable cases of the kind were witnessed by me—the first, in drawing on a boot; the second, from an attempt to mount a horse; and the third, from stepping into a carriage,—each individual supposing, at the moment, that his back had been broken by a blow from behind.

Muscular rheumatism is mostly distinguished by a burning sensation, often severely painful, greatly exasperated by the action of the muscle, with swelling and redness of the integuments. The muscles, in any part of the body, may be the seat of it, though those of the back of the neck, of the sides of the thorax, or intercostals of the lumbar region and hip, are mostly liable to it, to which are applied respectively the terms, torticollis, pleurodynia, lumbago, and sciatica.

This form of the disease is singularly prone to metastases, either to other muscles, or the joints. But, instead of being confined to one or more muscles, it, on some occasions, displays itself over a wide surface, seemingly not much deeper than the skin itself, causing a painful degree of heat and soreness.

There is a further modification of muscular rheumatism, which claims here to be noticed, though hitherto differently assorted. My allusion is to those cases which so closely resemble tetanus, as to be deemed one of the varieties of that disease. The analogy, indeed, in some instances, is nearly complete. Commencing very much in the same way, we have ultimately violent spasms of the muscles, together with most of the other symptoms of that affection. But though, sometimes, this similitude is not uniformly presented, more commonly, perhaps, there is a partial or general rigidity of the external muscles, attended by a cold, collapsed, insensible surface, exceedingly feeble pulse, haggard countenance, and obtuseness of the senses and intellectual faculties. The condition, in a word, is that of torpor, as well of the body as of the mind. But, on reaction taking place, the sensations are very exquisite, and, with universal soreness of the muscles, tremendous spasms occasionally ensue.

Though these several forms of rheumatism, with the exception of the tetanoid, are generally febrile, there are occasionally acute attacks of the disease, attended by much pain, where vascular excitement is scarcely discernible. These are merely local affections in which, the general sympathies being quiescent, of course no constitutional disturbance arises. Exactly the reverse, however, sometimes happens; or the highest and most ardent fever prevails, independently of any outward or ostensible local affection; or, at all events, it is so trivial as not to account for such violent and extensive effects; and this is what is called rheumatic fever.

It has been usual to consider rheumatism as exclusively a centrifugal disease. True, in the main, it does not universally hold. The viscera, and

every other structure, indeed, into which muscular or fibrous tissue enters, are, occasionally, liable to such attacks. I have witnessed them in the dura mater, in the diaphragm, in the stomach, or bowels, in the kidneys, in the uterus, and we have abundant proofs of its assailing the very fountain of the circulation. The heart is singularly liable to its aggressions, of which I have seen many instances, and still more are recorded. Bouillaud has, indeed, recently endeavoured to show a pretty constant coincidence between the articular and the cardiac affection, in its several diversities, of the recognition of which he arrogates the merit to himself. Except, however, as to the extent which, I suspect, is exaggerated, he has no just claim. The fact had been long determined, and taught by me, ever since my occupation of this chair, especially in tracing the etiology of the diseases of the heart, where it is assigned as a leading or principal cause.

Located in any of the internal parts, which it may be primarily, though much more commonly, by translation from the exterior, rheumatism bears so close an affinity to misplaced, or retrocedent gout, that it will be enough to refer to what was said on this subject. The metastasis is as sudden as in its kindred affections. On one occasion, I saw the translation in a moment, and without any premonition whatever.

No age, or sex, or condition, is entirely exempt from rheumatism. But it is mostly to be met with, in the acute form, about the meridian of life, rather in males than in females, and especially among the laboring classes, from, perhaps, their greater exposure to it causes; and in the lean or muscular, with a sanguineous temperament, than in the corpulent, nervous, or phlegmatic. Even very young children are liable to the disease. Examples of it I have seen so early as within the first year of life, usually in the muscles of the nape of the neck. It seldom occurs in aged persons, these being more subject to the chronic states of it.

Rheumatism depends on the sensible qualities of the atmosphere, and hence it is chiefly prevalent in positions greatly exposed to chilly moisture, and every where in the spring and fall, owing to greater and more sudden fluctuations of weather. But, at all times, by an exposure to cold, and particularly with moisture, or sleeping in a damp room, or damp sheets, or wearing damp clothes, or being thinly clad, or sitting in a draft of air, or entering ice houses or damp cellars, or other such places, an attack may be induced, and some of the worst cases I have ever encountered, were thus brought on in the midst of summer. Cold, operating on a previously heated system, is, indeed, so influential in the production of the disease, that the tetanoid variety of it, at least, is almost endemic in the torrid or intertropical climates. The writers of the West and East Indies speak emphatically of its prevalence, caused chiefly by sleeping, exposed to the dews and cool air of the night of those regions. Girdlestone, especially, mentions the remarkable fact of several hundred soldiers of a regiment being seized in this way, by sleeping in the open air, after a long and fatiguing day's march in some portion of India.

By Swédiaur, Brodie, and other writers, rheumatism has been traced to a suppression of the gonorrheal discharge; or, at least, a connection is attempted to be made between the two affections, the one arising as the other declines. That inflammation of a joint has taken place, under such circumstances, I am not prepared to deny. But its origination in gonorrhea, or its identity with rheumatism, remains to be proved; and, at all events, on so imperfect a foundation, I am not disposed to erect a new species of the disease.

Not a little has been said of the predisposition to rheumatism, by some writers. That the circumstances mentioned, as sex, age, occupations, climate, and season, or states of weather, and temperament, do influence its production, cannot be doubted, though most of them rather as exciting, than predisposing causes. More than, perhaps, by any thing else, is a susceptibility to it created from the abuse of mercury. Yet a strong tendency to it is sometimes met with, pervading whole families, the occasion of which may be concealed, or certainly not always assignable to appreciable constitutional peculiarities. Examples are, indeed, given of its having been transmitted through successive generations as an inheritance, with the same obscurity in regard to the mode of its origin, or the condition by which its propagation is promoted.

With an unusual proclivity to rheumatism, an attack of it is readily excited by very slight causes, as a strain, or other injury to a joint, or by an indiscretion in diet, indulging freely in high seasoned food, or stimulating drinks; and in all instances, the liability to relapses is lively and enduring.

Much as gout sometimes resembles rheumatism, the prominent distinctions already given, with a careful comparison of the whole history of the two diseases, can scarcely ever fail to lead to a just diagnosis.

Excepting the two leading divisions of the disease itself, the fibrous and muscular, which are too clearly designated to be well confounded, it requires some attention to be enabled to discriminate, with precision, the modifications of rheumatism, as occasioned by its several locations.

As to this point, I have merely to state, that, a joint being affected, we shall find some marked difference in the symptoms; as the tendons, ligaments, and fasciæ, or the synovial capsule and bursæ, may be concerned. The pain, in the former, is acute and lancinating, the swelling slowly arises, and never attains to any height—is florid and exquisitely tender, comparatively seldom involving the surrounding textures. It is very much the reverse with the latter; or the pain is dull and steady, the intumescence quickly takes place, and is circumscribed and elastic, or pulpy, or edematous, from effusion into the adjacent cellular membrane; to which may be added, that the general constitutional disturbance is far greater in the first than second instance, in proportion to the degree of the local affection. In relation to the other cases, there is less difficulty, and they are, perhaps, sufficiently cognizable from what was said in the antecedent sketch of them, and I shall therefore decline a further prosecution of the inquiry into their peculiarities.

Certain spinal and neuralgic affections, have also a resemblance to some of the rheumatic modifications, and especially to lumbago and sciatica. Not now to go into any details, I have to observe, that, whenever the muscular system is concerned in these instances, and the pain is referable to the muscles restricted to them, and relieved by rest, and agonizing on the least motion. In the other lesions, without these characteristics, the source of the irritation is to be traced to a point in the vertebral column, betrayed by tenderness on pressure, from which emanate acute darting sensations, pursuing the course of a nerve or nerves. Not a little may also be learned by an inquiry into the causes, and mode of production, of these different affections.

Managed properly, acute rheumatism, excepting the tetanoid variety, can nearly always be cured, and never proves immediately dangerous, unless fixed in some important or vital organ. Neglected, however, or feebly treated, and especially where the local inflammation is violent and continues long, it so deranges the structure of the parts, as to irritate the system into hectic fever, followed by its wasting and debilitating consequences. Death in this way very often happens. But, though such may be one of its ordinary terminations, it is deserving of remark, that cases in which there is slight, or perhaps no appreciable affection of the joints, called rheumatic fever, are usually very refractory, and certainly still oftener prove fatal. No explanation of this curious fact, so far as I am aware, has heretofore been offered. Writers in noticing it, pass it over without any attempt of the kind. It has for some time occurred to me, that the violence and intractability of such attacks were owing to some internal lesion or lesions of a rheumatic nature, maintaining this indomitable fever, which is to be deemed merely an effect. Not having had any opportunities of autopsic inspections, I am not able to verify the conjecture by this test. But the tendency of the disease to a centripetal direction is well known. Bouillaud, as we have seen, pretends to have demonstrated, in a very large proportion of instances, the connection of the acute cardiac phlegmasiæ with articular rheumatism. Even admitting such a co-existence, which, for reasons previously stated, I cannot, to the extent claimed, it would be unsatisfactory in application to the present case. There is here scarcely ever any sensible affection of the joints; and those of the heart are so prominently displayed by severity of pain, and other symptoms, as not to be overlooked. The lesion must be in the mucous surface of the primæ viæ, or some other part, equally disposed to conceal its injuries by withholding the outward and visible signs of them.

Rheumatism, however, is one of those diseases, under all circumstances, exceedingly apt, on being confirmed, to run a tedious course of several weeks, and, when life is preserved, then gradually to slide into chronic degenerations, and especially the articular form of it.

From the preceding observations may be deduced the portents of the adverse events of the disease. The contrary, or indications of convalescence, are the subsidence of the local pain and

inflammation, with the abatement, or total cessation of fever, a moist, soft, perspirable skin, open bowels, and copious discharges of urine, depositing a lateritious sediment.

Concerning the phenomena on dissection in acute rheumatism, these are not well understood; death, as just said, seldom happening to afford the means of inspection. Yet we are not destitute of intelligence on the subject. Examinations have shown that, in the articular form, the structure of the joint is uniformly affected in some degree. The synovial membrane, especially, undergoes considerable changes, being found injected, red, and swollen, with serous or sero-lymphatic, or sero-puriloid, or sanious effusions. Between the theca of the tendons, or rather within the surrounding cellular membrane, we meet with pretty nearly the same appearances. Extravasations of a peculiar gelatinous fluid are, however, more common events. The latter is the proper product of fibrous inflammation, which, at least, never ends in suppuration, or gangrene; and, when the other results take place, in articular rheumatism, they are to be referred to the textures mentioned.

In the muscular species, scarcely any appreciable alteration is usually discernible. But in very violent attacks, the affected muscle exhibits a reddish brown colour, and is so softened as readily to be torn, the interstitial membrane containing bloody serum, or pus, and sometimes even an abscess.

Those of the heart excepted, which have been accurately determined, the appearances in the other internal organs, I do not know, though it is presumable they are like the lesions of the external structures. The heart, itself, sometimes exhibits the characteristics of spasm, only, where death suddenly happens. But in more lingering cases, we are presented with all the phenomena of active phlogosis, in its substance, its fibro-serous envelope, and in the lining of its cavity, the one or the whole being implicated. The great arteries, the aorta, especially, have been discovered in similar conditions.

In many of its features it is so analogous to that of gout, the pathology of rheumatism need not detain us long. Consisting in inflammation of the fibrous or muscular tissue, to this most of its peculiarities may be assigned. That such is true, seems to be proved by the fact, that the disease originating in, or being translated to other parts, these are lost. Thus we see, when seizing on the mucous surface of the bowels or lungs, how striking is the difference! The eye affords a further conspicuous illustration to the same purport. Composed of diverse tissues, each phlogosed has its own characteristics; the sclerotica alone, which is fibrous, presenting those of a rheumatic affection.

Located precisely as gout, there is, however, as I have indicated, considerable dissimilarity in the nature of the two diseases, which, I repeat, is partly to be ascribed to a want of identity in the causes whence they proceed, the variations of morbid action being as much influenced by this circumstance, as by the position it may occupy. Nor must we fail to advert to an additional consideration, which, perhaps, still more determines the discrepancies in these allied affections. Gout

has its own distinctive diathesis, and whatever operates on it necessarily gives rise to phenomena sui generis, on changing the affinity to any other condition.

But other views have been and are entertained of the pathology of rheumatism. The idle notions of antiquity regarding it may be pretermitted, and, indeed, the only one I deem worthy of attention, is that recently promulgated, which supposes rheumatism to be a neuralgic affection, proceeding mainly from spinal irritation. Embarrassed by the peculiarity of the rheumatic state, having then no precise knowledge of the influence of causes or textures in this respect, pathologists, as long ago as the period when it was so much the habit to seek shelter for ignorance under the term nervous, had refuge in this resource. But of late, the hypothesis has been presented in a more definitive and attractive shape. Having in the consideration of neuralgia pointed out the difference between it and rheumatism, I shall not now pass over the same ground of discussion. That neuritis, or neuralgia of the great nerves, and especially the sciatic, has been too frequently mistaken for rheumatism of the adjacent muscles, or certain spinal irritations, confounded with lumbago, or affection of those of the small of the back, I am not now to be told. But further than this, I cannot admit, and must here recur to a remark formerly made, that no reason can be shown why the fibrous and muscular tissue may not be primarily affected, as well as any other of those of the body.

(To be continued.)

BIBLIOGRAPHICAL NOTICES.

An Experimental Investigation into the Functions of the Eighth Pair of Nerves, or the Glosso-Pharyngeal, Pneumogastric, and Spinal Accessory, by JOHN REID, M. D. Fellow of the Royal College of Physicians of Edinburgh, Lecturer on the Institutes of Medicine, formerly Demonstrator of Anatomy, &c. [From the Edinburgh Medical and Surgical Journal, January, 1838.]

(Concluded from page 131.)

PNEUMOGASTRIC NERVE. That part of the trunk of this nerve which lies in the neck, was exposed, in thirty animals, and when pinched, cut, or even stretched, *indications of severe suffering*, were given in almost every instance. The sensibility of this nerve has been noticed incidentally by Haller, Brunn, Dupuy, and Dumas.

Pharyngeal Branches.—In detailing the experiments upon the glosso-pharyngeal, sufficient evidence was adduced to prove the pharyngeal branch of the par-vagus, to be a *motor nerve*, distinct convulsive movements of the *constrictors* of the pharynx, stylo-pharyngeus, and the muscles of the soft palate, being caused by irritating it; and our author thinks that we are justified in inferring

"that this is the principal, if not the sole motor nerve of these parts."

"I find, that I have notes of the observations made upon the effects of pricking, cutting, and tying these nerves in seven dogs. In four of these it is expressly stated that there was not the slightest indication of suffering; in two, that there were no decided indications of suffering; and that in one, there was undoubted indications of suffering. **** It is quite possible that if this animal, instead of being kept alive for further observation, had been killed at the time, and the nerves carefully dissected, some unusual arrangements of the nervous twigs might have accounted for this difference; for in the other six the nerves were, as I have stated, pricked, cut, and tied, and yet no decided evidence of pain showed itself." p. 134.

To determine the effects of the section of the pharyngeal branch upon the function of deglutition, it was cut across on both sides, and a portion removed, in five dogs. In three, satisfactory observations were made. In all, the integrity of this function was sensibly affected, and this was manifested exactly in the same manner—violent, numerous, and prolonged movements in the pharynx. Whilst, then, the sensations of the pharynx and fauces depend upon the glosso-pharyngeal nerve, the pharyngeal branch of the *par-vagus* is the motor nerve of the same parts. "This view of the functions of the nerve, is supported by their ultimate distribution upon the pharynx and fauces."

Superior Laryngeal Nerve.—From numerous experiments tried upon animals whilst living, and also immediately after death, our author concludes that:

"One only, of the intrinsic muscles of the larynx, receives its motor filaments from the superior laryngeal, viz: the *circo-thyroid* muscle; and that consequently, the only change which this nerve can produce on the larynx, as a motor nerve, is that of approximating the cricoid to the thyroid cartilage—in other words, of shortening the larynx." p. 140.

"That the superior laryngeal furnishes all, or at least nearly all, the *sensitive* filaments of the larynx, and also some of those distributed upon the *mucous surface* of the pharynx." p. 145.

"That the inferior laryngeal, or recurrent, furnishes the *sensitive* filaments to the upper part of the trachea; a few to the *mucous surface* of the pharynx, and still fewer to the *mucous surface* of the larynx.

"That when any irritation is applied to the mucous membrane of the larynx in a healthy state, this does not excite the contraction of the muscles which move the arytenoid cartilages, by acting *directly* upon these through the mucous membrane, but that this contraction takes place by a *reflex action*, in the performance of which the superior laryngeal is the *sensitive*, and the inferior laryngeal is the *motor* nerve." p. 146.

To the question, "Does Section of the Laryngeal Nerves, prevent the ingress of the food into the Larynx during Deglutition?" Dr. Reid answers that the animals swallowed both solids and liquids without inconvenience, and on careful examination after death

"Not the slightest trace of food could be detected in the air passages. From these experiments it would appear, that if the closing muscles of the glottis, can, as Magendie has shown, prevent the entrance of food into the larynx after removal of the epiglottis, the epiglottis can, on the other hand, prevent the ingress of food into the larynx, when the movements of all the muscles which diminish the size of the glottis, have been suspended by section of the laryngeal nerves." p. 146.

Æsophageal Branches of Par-Vagus.—Mechanical and chemical irritation of the trunk of the *par-vagus*, in an animal recently killed, induced violent muscular contractions along the whole length of the *æso-phagus*. The tube became shortened, and its calibre diminished. These movements reached, also, to the *cardiac* extremity of the stomach, from which they extended, somewhat slowly, over a greater or less extent of that viscus.

A portion of the pneumogastric was removed on both sides, in two rabbits, above the origin of the superior laryngeals. The animals had been made to fast from sixteen to twenty hours; parsley being placed before them, they commenced eating it with avidity, and the first mouthfuls were readily swallowed. As they continued to eat, their breathing became distressing, and they seemed very uneasy. Efforts to vomit were made. After a while the *dyspnœa* abated, and they returned to their food, but the same phenomena speedily returned, forcing them to desist. Both the rabbits died. On dissection the *æso-phagus* was found enormously distended, and compressing the trachea. The stomach was not unusually full. The larynx, trachea, and bronchi contained large quantities of the masticated parsley. "In some parts of the lungs, it was found in the minutest air cells, and one or two portions were perfectly dense, from the quantity which they contained."

"We believe that in these two experiments the first mouthful was carried into the upper portion of the *æso-phagus* in the usual manner, but as the muscular movements of this tube had been suspended, it remained there. As additional mouthfuls arrived they propelled forward those which preceded them, so that after a while these formed a column of food reaching from the lower part of the pharynx to the stomach. As the difficulty of propelling it into the stomach increased, the *æso-phagus* became more distended, and pressed upon the trachea, and thus prolonged the *dyspnœa* and uneasiness. The difficulty of propelling the food still increasing,

it accumulated in the *pharynx* and passed into the open *larynx*." p. 152.

The late Mr. Broughton and Dr. Wilson Philip having contended that the presence of the parsley in the *œsophagus*, depended upon ineffectual efforts of the animal to throw it off the stomach, and as, in the two experiments just mentioned, attempts at vomiting were made, Dr. Reid resolved to ascertain satisfactorily the truth of this assertion; for this purpose the previous experiments were repeated, the animal being killed "before it had given the slightest indications of any effort to vomit." A precise condition of the parts resulted in these cases.

"We believe that these experiments prove quite satisfactorily, that the *œsophagus* is distended before the *stomach*, and also fully bear out the explanation of the phenomena, arising from the retention of the food in this tube, which we have given above." p. 154.

Pulmonary Branches of the Par-Vagus.—In fourteen animals, Dr. Reid removed a portion of the *par-vagus* on one side, in order to determine the effects of section of that nerve upon the lungs, and in no instance did he observe any morbid structural change which he could attribute to lesion of the nerve. In all the experiments a sufficiently large portion of the nerve was removed to prevent re-union. The animals were permitted to live from four days to six months. This invalidates the statements of Swan and Magendie.

Physiologists of the present day generally concede the persistence of the respiratory movements after the division of both pneumogastrics, but explain it on very different principles. To those who contend for the exclusiveness of volition in this function, the fact would appear to lend some countenance; but as this view is, from other reasons, indubitably untenable, we shall not stop to discuss the point. The other class, who believe that respiration depends upon impressions made originally on the mucous membrane of the lungs, and reflected upon the *medulla oblongata*, must acknowledge some modification in the usual process, when they see it maintained after section of the *par-vagus*. Brachet has asserted, with more ingenuity than truth, that breathing continues after the nerves have been cut, from the result of habit! Marshall Hall believes, that when this condition occurs, the function is no longer *excito-motory*, but is now transformed into a cerebral, or voluntary act. From these hypotheses, let us turn to Dr. Reid's conclusions:

"I am satisfied that these respiratory movements will not only go on regularly and vigor-

ously for hours together in kittens one or two days old, but that they will also proceed in animals deprived of all volition by a small dose of prussic acid. Thinking that it might be possible, though certainly not probable, that the impressions made at the lungs might in these cases reach the *medulla oblongata*, through the free-anastomoses between the laryngeal nerves at the larynx, (for in the first experiments I cut the nerves, as is generally done, in the middle of the neck,) I proceeded to repeat the experiments, by dividing the nerves near the base of the cranium, and above the origin of the superior laryngeals. The results, however, were the same as when the nerves were cut in the usual manner." p. 161.

Brachet's experiments appeared to prove, beyond doubt, that section of the pneumogastrics annihilated the *besoin de respirer*. Our author's experience is at direct variance with the French physiologist, and is doubtless correct. In numerous animals, when the access of air to the lungs was suddenly and fully prevented, great distress and anxiety resulted.

SPINAL ACCESSORY NERVE. Before discussing the functions of this nerve, Dr. Reid adverts to its anatomical arrangement, origin, and distribution. All that we shall be enabled to do, will be briefly to enumerate the conclusions, which, after numerous experiments, he is led to infer.

1. "The filaments of the *external* branch of the *spinal accessory* are principally motor, and that the sensitive filaments must be very few in number. Whether these filaments belong originally to the nerve, or whether it derives them from the other nerves, at the base of the cranium, with which it anastomoses, we cannot at present determine." p. 169.

2. "As far as we can observe, the functions of the *external* branch of the *spinal accessory*, exactly resemble those of the filaments coming from the cervical plexus, with which it anastomoses so frequently." p. 171.

3. "From these experiments, we think there can be no doubt that the trunk of the *par-vagus* contains within it *motor* filaments, independent of those which it receives from the *internal* branch of the *spinal accessory*; that the *internal* branch of the *spinal accessory*, assists in moving the muscles of the *pharynx*, we are satisfied, not only from the experiments just stated, but also, from those on the *pharyngeal* branch of the *par-vagus*. Of the probable destination and functions of the other filaments of the *internal* branch of the *accessory*, we cannot pretend to judge without more extended inquiries. We certainly do not consider that these experiments entitle us to assert that they are not *motor* filaments." p. 173.

The experiments of Dr. Reid, upon the glosso-pharyngeal and *spinal accessory*, oppose directly the functions assigned them by Sir Charles Bell, and shake to its very foundation his ingenious respiratory theory. If one associated movement can be maintained, without an especial tract of nervous

matter, why may they not all be carried on simply through the interference of the voluntary nerves. No one pretends to have discovered an urinary, or a defecatory tract.

From the brief epitome of Dr. Reid's communication which we have been enabled to give, our readers will, we feel assured, justify the favorable opinion we expressed, at the onset, of our author's labours, and will be stimulated to a speedy and careful perusal of them. We hope to see, ere long, the whole essay, enriching the pages of some of our contemporaries, whose plan will allow of its entire translation.

TRAITÉ PRATIQUE DES MALADIES VÉNÉRIENNES, ou, *Recherches Critiques et Experimentales sur l'Inoculation appliquée à l'étude de ces Maladies; Suivies d'un Résumé Thérapeutique et d'un Formulaire Spécial.* Par PH. RICORD, Docteur en Médecine, Chirurgien de l'Hôpital des Vénériens de Paris, &c. &c. Paris: 1838, pp. 808, 8vo.

A PRACTICAL TREATISE ON VENEREAL DISEASES, or, *Critical and Experimental Researches upon Inoculation applied to the study of these Diseases,* &c. By PH. RICORD, M. D., Surgeon to the Venereal Hospital at Paris, &c. &c. Paris: 1838, pp. 808, 8vo.

"The venereal disease arises from a poison, which, as it is produced by disease, is capable again of producing a similar disease," is the well known result of the experience and reflections of John Hunter. Among the attempts of modern times to simplify nosology, not the least conspicuous, and supported by respectable authority, have been the efforts directed against a belief in a specific contagious syphilitic virus. The anti-specific doctrines of the physiological school of medicine, have not, however, met with general favour. The faith of the mass of medical thinkers in the conclusion of Hunter, has been unshaken; they have always believed that syphilis must be traced to a special cause, having as distinct an existence, as the venom of hydrophobia, the poison of the viper, or the matter of small-pox. Much talent and ingenuity have, it is true, been enlisted in the advocacy of the contrary opinions, nor have they been abandoned. A disciple of Broussais, M. Desruelles,* has lately been in the field, in the defence of the non-specific doctrines. He has expended much research, and displayed some subtlety, in the endeavour to reconcile, with facts, the speculations of his master. "Physiological medicine," says Broussais, "should confine itself, in syphilis, to the study of the forms and degrees of

irritation, in the different parts of the body, and to noting the modifications that may be opposed to them."

The conclusions of M. Ricord, based upon experiments, which he has been for a series of years pursuing in the Venereal Hospital of Paris, add new and irresistible weight to the belief in the existence of a distinct venereal virus. Following in the track of Hunter, he has applied *inoculation* to the study of venereal diseases, and his results and deductions are before us, in the volume just issued from the Parisian press. M. Ricord has, from time to time, put forth fugitive papers on these subjects, but his researches are now, for the first time, offered to the public in the collective form. Experiments similar to those of M. Ricord have been latterly made in Great Britain,* and with confirmatory results. We propose to offer to our readers a somewhat extended analysis of this remarkable and very interesting work.

The *Traité Pratique* offers three grand divisions: the first is devoted to a critical examination of the subject of inoculation, applied to the study of venereal affections; in the second, the author brings a mass of practical observations to the support of his opinions; the third is a therapeutic summary, or an account of the modes of treatment which he found most successful at the Venereal Hospital.

M. Ricord's experiments on inoculation were made upon individuals affected with the syphilitic disease. No circumstances can justify, he very properly admits, communicating to a healthy man a disease, the consequences of which it is impossible to foresee. All his objects were, besides, equally attainable by experimenting upon subjects, already exposed to the action of the virus. For, the existence of one primary venereal sore, is no obstacle to the contracting of others, which, moreover, cannot be developed, save by contagion, from contact with pus, from the first or a similar ulcer. Again: constitutional infection cannot prevent a fresh development of primary sores, nor is the occurrence of the former at all dependent upon the number of these at a given period. These positions are susceptible of easy demonstration, and, admitting them to be established, we pass with M. Ricord to his experimental investigations. "All the secretions, whether normal or morbid, of individuals reputed to be affected with syphilis, were examined by the mode of inoculation, and the results were invariable with those of but one form, which was the primitive ulcer, otherwise

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*By Mr. Thompson, (see London Medical and Surgical Journal, 1833,) and Mr. Wallace of Dublin, (see Lancet, 1837.)

termed chancre." p. 85. The distinction is made, that a chancre secretes the venereal virus, only while the ulceration is in a state of progress, or in *statu quo*, and that, with the first efforts towards cicatrization, the virus disappears. The location of a chancre has no influence on its special nature; it is independent of the genital organs.

The conclusion which M. Ricord deduces from his experiments, then, is, that "chancres, where ever situate, are the consequences of a specific pus which they alone secrete, and which, like a true leaven or special ferment, reproduces a disease identical with itself, whenever properly applied." p. 88.

The effects of the inoculation of the pus of a chancre beneath the epidermis, are the following.

During the first twenty-four hours, simple redness, as in vaccination, results; from the second to the third day, there is slight tumefaction, and the point of inoculation presents the aspect of a small papula, surrounded by a red areola; from the third to the fourth day, the epidermis is elevated by a liquid more or less turbid, and often takes a vesicular form, having, at its summit, a black spot, the result of the drying of the blood from the original puncture; from the fourth to the fifth day, the morbid secretion increases, becomes purulent, the pustular form makes its appearance, and a depression of its summit gives it an umbilicated aspect, resembling the pustule of variola. At this period, the areola, which has been extending itself, often begins to disappear; but, from the fifth day, the subjacent tissues, up to this time not affected, or merely slightly edematous, become infiltrated and hardened by the effusion of a plastic lymph, which gives to the touch the resisting and elastic feel of certain cartilages. Finally, from the sixth day, the pus thickens, the pustule shrivels, and incrustations begin to be formed. If they are not detached, they are seen to increase in size from their base, and, rising in strata, to take the form of a truncated cone with a depressed summit. If the incrustations be detached, or fall, an ulcer is found beneath, with the indurated base described, and a bottom, of a depth represented by the entire thickness of the skin, with a white surface of a grayish tint, composed of a lardaceous matter, sometimes pultaceous, or even with a false membrane, not to be detached by any cleansing process. The edges of the ulcer, at this period, are as smoothly cut as if by a circular instrument; they are, however, insulated, to a greater or less extent, and exhibit slight indentations, and a surface like that of the bottom; their margin is indurated like the base, and pre-

sents a sort of ring, of a reddish-brown colour, with a violet tint, which, projecting above the surrounding parts, elevates and slightly turns down the edges, giving the ulcers at first an infundibuliform appearance.

We have thus minutely described these phenomena of inoculation, because, upon their regular and constant occurrence the author bases the establishment of a general rule, from which he makes his most important deductions. The most striking of these deductions, is, that no external appearances can determine, with certainty, the existence of a chancre, the only absolute test being the pus which it secretes, which always remains identical. Our author has here, perhaps, the appearance of reasoning in a vicious circle; he has told us that the matter of chancres, when inoculated, produces certain invariable results; and yet, we are to know a chancre only by the occurrence of these results. This seeming discrepancy, however, disappears, if we give credit to the assertion, that regular, characteristic syphilitic constitutional affections are the sequelæ only of chancre, or hereditary transmission. For confirmation of these two important propositions, M. Ricord appeals to the results of the experiments *publicly* performed by him, during a course of years, at his hospital at Paris. We are disposed to believe his facts, and to admit with him, first, that, if out of a series of ulcers upon the genital organs and other parts, inoculation with the matter of a given number was attended with an unvarying succession of phenomena, the existence of a specific local affection is proved; and, secondly, that if constitutional symptoms occur, only after ulcers of this special character, the existence of a general, as well as local specific disease is likewise demonstrated.

Among M. Ricord's other conclusions, we find the following. The pus of a chancre can alone produce a chancre, and the best mode of producing it is inoculation with the lancet; it may be produced without venereal or other excitation of the parts acted on; inoculation never fails, if the pus be properly selected and applied; pus taken from an inoculated pustule reproduces a chancre, and so on in an infinite series; chancre, at its commencement, is a local affection; if it be completely destroyed by caustic during the three, four, or five days, immediately following the application of the cause, there is no risk of secondary inflammation; the induration of chancres commences about the fifth day, this may be considered to denote that the virus is penetrating into the economy, and that the chances of secondary symptoms are increased.

After these general considerations on the subject

of inoculation, (upon which we have dwelt at some length,) the author proceeds to treat of it, with reference, successively, to primary and secondary symptoms, therapeutics, hygiene, and medical jurisprudence.

It may be supposed, that inoculation is invoked as the only means of distinguishing true syphilitic primary sores from other affections, reputed to be of that nature, because noticed after impure sexual intercourse. These may be, we are told, blennorrhagia, in its various seats, bubo, viewed as a primary affection, and the mucous tubercle, styled primitive. No notice is taken of ulcers on the genitals, from laceration, excoriation, or other such cause, which are often not a little intractable in their character, and may, we think, be confounded with chancre. Inoculation must here be a valuable means of diagnosis.

From the previous conclusions of our author, it will be inferred, that his experiments resulted in establishing, contrary to the views of Hunter, that blennorrhagia has no identity with chancre, and is incapable of generating it. Blennorrhagia is an affection of a catarrhal character, usually, indeed, to be traced to the irritating application of such a discharge to the part implicated, but distinct from the virulent pus of a chancre. But a woman with a blennorrhagia, it is objected, has been known to communicate to one man a running from the urethra, and to another a chancre. The application, however, of the speculum, by M. Ricord, to the study of venereal diseases, has solved this difficulty. Deep-seated chancres of the vagina and uterus, are found, by the aid of this instrument, to co-exist with the outward appearances of simple blennorrhagia. In all the cases, and they were numerous, in which women, who had communicated syphilis, were thus examined by M. Ricord, ulcers of the genitals were detected. It may be fairly inferred, that, in the instance above cited, there was the same combination that presented itself at the Venereal Hospital. If, to the above facts, we add, that constitutional syphilis was never found by M. Ricord, to be the consequence of blennorrhagia, his conclusion must be allowed, that chancre and blennorrhagia constitute two entirely distinct diseases.

On the subject of buboes, M. Ricord makes the generally admitted distinction of buboes from absorption, and from sympathy. The bubo arising from absorption of the pus of a chancre, he considers virulent and capable of producing a chancre, by inoculation. This, too, he looks upon, as the only final test of the character of a bubo. The vexed question, can there be primary syphilitic bu-

boes, M. Ricord answers in the affirmative, though such accidents he deems of exceeding infrequency of occurrence. For them to take place, the lymphatics must necessarily have their mouths opening upon the mucous, or cutaneous surface; absorption, in this case, cannot be preceded by any sort of imbibition, as the tissues, impregnated with pus of a chancre, must become infected, and as a necessary consequence, take on the ulcerated process.

The nature of certain secondary syphilitic sores, occasionally mistaken for primary, as the mucous tubercle, (venereal wart,) is briefly discussed by M. Ricord. He determines them not to be primary, to be incapable of communication by inoculation, and, like other constitutional symptoms, to be transmitted only by the mode of inheritance.

Our author's classification of the symptoms of syphilis are, into primary, successive, secondary, and tertiary, to which he adds non-syphilitic affections, the development of which has been favored by the occurrence of syphilis. The primitive accident is, of course, the chancre; the successive are such, as arise from the simple extension of the first local symptom, as, new chancres, inflammatory or virulent abscesses, and the like; secondary symptoms are those produced by constitutional infection, showing themselves on the skin, mucous membrane, eyes, testicles, &c.; they are not susceptible of inoculation, but are, incontestably, transmitted as an inheritance, from parent to child; tertiary accidents occur long after the disappearance of the primitive, and, most generally, after the occurrence of secondary symptoms; they are incapable of hereditary transmission, but are a frequent cause, through generation, of scrofulas, which the author looks upon as often degenerate syphilis. These tertiary symptoms are nodes, deep-seated tubercles of the brain, cellular tissue, &c., diseases of the bones and periosteum, and other internal affections not yet well defined.

The venereal virus is carried into the system by venous absorption. As this is distinct from the lymphatic absorption which produces buboes, there is no necessary connection between the appearance of these and constitutional infection. Once united to the blood, however, the virus loses the power of inoculation, inoculable pus having never been detected in the veins. Secondary symptoms cannot, therefore, be inoculated; but ulcers on other parts than the genitals, as the lips, tongue, and even pharynx, on all of which M. Ricord has seen primitive sores, arising from unnatural intercourse, should not be confounded with constitutional symptoms.

The results of the application of inoculation to the study of therapeutics are, the author admits,

still meagre. He is sanguine, that an absolute prophylaxis against syphilis will one day be discovered, and dwells upon the value of inoculation as a test for the employment of any future specific remedy for syphilis. The usefulness of inoculation, as a means of prognosis, need not be urged. The importance, too, of its application to hygiene and medical jurisprudence, cannot be too highly estimated.

The second part of the *Traité Pratique* contains, as we have mentioned, a summary of the author's clinical and experimental observations. They were made between the years 1831-'37. During this period, a mass of results was obtained, sufficient, we think, to authorise the important deductions which are arrived at. Connected with this subject, the author's credibility is the most important question to be discussed. The assertions of French writers are, we know, received in this country with some distrust. The flat contradiction which the published statements of a distinguished Parisian Surgeon, M. Lisfranc, received from the internes of his hospital, is fresh in the recollection of our readers. But we are disposed to yield credence to M. Ricord, because we think his facts bear with them the evidence of their veracity. They are consistent with themselves; and the absence of discrepancy in statements adds strong weight to testimony. The results of his experimental investigations will moreover be confirmed by the individual observations, and *a priori* reasoning of the profession generally. M. Ricord has, we believe, a fair character for professional honour. He is by birth an American, a native of Baltimore, where his boyhood was spent.

(To be concluded in our next.)

CLINICAL LECTURES.

LECTURES ON CLINICAL MEDICINE, delivered at the Philadelphia Medical Institute, by W. W. GERHARD, M. D., Physician to the Philadelphia Hospital, &c.

INTRODUCTORY.

Thursday, April 12th. DR. GERHARD commenced: Gentlemen, a course of lectures on clinical medicine differs from one on theory and practice, in its demonstrative and practical character. It is necessary for a teacher of the practice of medicine to pass through the circle of diseases, describe their forms, their history, and their mode of treatment, in a methodical manner. Such an order is pursued as may be best in accordance with the views of the teacher, but it is always requisite, that he should present to the mind of the pupil, a connected and systematic view of pathology and treatment.

Clinical medicine is the application of the precepts of the art to the recognition and treatment

of disease. It requires demonstration in order to point out the phenomena as presented in nature, to accustom the pupil to the varieties they exhibit, and to habituate him to the use of those precautions which are requisite, in order to detect the signs of disease, which would escape a superficial inspection. As the phenomena of disease must be studied, in the order in which they chance to occur to us, a clinical course is less regular in its arrangement, but more precise and exact in its evidence, than one upon the practice of medicine. It requires a sustained attention to reduce to order the assemblage of facts, which are presented in succession, but which are always dependent upon fixed and invariable laws. To trace these laws, and as far as possible to point out the precision to which certain departments of medicine have been carried, and the still more rigorous demonstrations, of which the entire science will be one day capable, is the great object of the present course. In the beginning, many of the relations of disease will escape the attention of the pupil, but, in proportion as his knowledge of nature increases, the beauty and harmony of the laws of pathological action will seem not less striking, than the order which regulates the healthy actions of the economy. A single disease will then, in a great measure, include a knowledge of all others, for it is the comparison of the symptoms of disease, which enables us to distinguish one from the other; it is the knowledge of the relations which they mutually bear to each other, which enables us to adopt a successful curative or prophylactic practice.

There is but one method of becoming familiar with these truths; it is the frequent and repeated examination of them, from different points of view; if the results thus obtained agree one with another, the deduction assumes the force of a mathematical demonstration, if they differ, we may be sure that the error lies in our powers of observation, or in our imperfect reasoning, which prevents us from appreciating the regular and fixed laws of nature. It is now well known, that acute articular rheumatism is a frequent cause of chronic diseases of the heart. This fact is proved in two ways; first, by direct observation of patients affected with a rheumatism in whom an acute disease of the heart appears, which assumes a chronic form, after the affection of the joints has entirely disappeared, and secondly, by carefully interrogating patients who labour under chronic disease of the heart, which has evidently dated from an attack of rheumatism, which had occurred long before. This is one of the simple illustrations of our meaning; in the progress of the course, other and more complicated instances will be brought forward, which exemplify the laws of relation, in a still more beautiful manner.

A knowledge of the relations of disease necessarily requires a familiarity with diagnosis, or the art of distinguishing one disease and one variety of disease from another. Diagnosis, on the other hand, requires a knowledge of semeiology, or the art of recognising the signs of disease, by the alterations which they produce in the functions of the body, and of connecting these altered functions or symptoms with the changes in the condition of the organs to which they correspond. As the important organs of the body are concealed from our

direct observations, we become aware of the changes which occur in them during life, by an examination of the traces of diseased action which are left after death. The investigation of the disorders found after death, their classification and connexion with changes occurring during life, constitute the science of pathological anatomy.

These various branches of medical science are so intimately connected with clinical medicine, that they form, as it were, a necessary part of it, and are indispensably requisite for the pupil. For convenience of study, they may be learned separately. In this course, they will be taught in such a manner as not to interfere with the regular demonstrations of disease; a part of the course being devoted strictly to clinical medicine, and a part to the acquisition of those means of investigation which the physician requires, in order to become familiar with disease. By directing your attention to the study of disease, at the same time that you are learning the arts necessary for its exploration, you will find, that practice will render theory precise, and strip it of what is obscure and doubtful.

It is not necessary to enter into complete details of the symptoms and treatment of each disease; I shall, however, in all cases, point out the treatment which is certainly known to be effectual in arresting the disorder, and distinguish it from therapeutics, which rest upon probable evidence. Where the best treatment in a case cannot be positively known, I shall indicate the probable success of particular methods. In those diseases which have a natural duration, treatment has much power in diminishing the severity of the disorder, and in lessening its mortality, but it does not suddenly arrest the symptoms. This class of disorders is apt to lead the practitioner into error, at the beginning of his career, and furnishes the most common pretext for the success of charlatans. It is, therefore, the duty of a clinical teacher to distinguish them carefully from other affections, and to analyze the exact power of remedies.

At my next lecture, I shall enter upon the regular course, and commence with the subject of acute articular rheumatism. In proportion as we advance in our study of disease, the mode of investigation, which I have just pointed out, will become more intelligible, and of more easy application.

NOTE.—This course of lectures will be continued during the summer, in as regular an order as the nature of the subject will permit. Reports of them will be given in the Examiner.

ACUTE ARTICULAR RHEUMATISM.

Tuesday, April 17th. Dr. GERHARD remarked: I shall to-day, gentlemen, take up the subject of acute articular rheumatism, as it is especially prevalent at this season of the year, when the number of other acute diseases is very limited. In summer we have acute abdominal inflammations, and in winter affections of the pulmonary organs, while, during the spring and early summer months, serous inflammations, both of the internal and external membranes, are most common. Acute rheumatism bears some striking relations with the inflammations of internal serous membranes, from the similarity of the mode of treatment which often becomes necessary in both affections, and from the

frequent complication of the latter with the former disease. In almost every severe case of the disease under notice, there co-exists inflammation of the covering of the heart, or of the serous membrane lining its cavities. Since this connection between the pathology of articular rheumatism and that of diseases of the heart and its membranes, has been clearly traced, the disease has attracted much interest. I say clearly traced, for the general fact had been long since pointed out, although the subject was not precisely understood. That is, it was in the same situation as many other parts of pathology; affording an indistinct view of the truth, but without that well defined character which is now required, according to the rules of rigid logic applied to the study of pathology. The line of connection has only been drawn in a definite manner, for a few years past, between acute articular rheumatism, and endocarditis, or inflammation of the lining membrane of the cavities of the heart, and pericarditis, or inflammation of the membrane surrounding it. Dr. Bouillaud, of Paris, has paid particular attention to this subject; he tells us that at least one-half the acute articular affections are complicated with pericarditis. In this estimate he is probably wrong, unless with pericarditis we are permitted to include endocarditis. A large number of mild cases doubtless run their course, without any complication of the kind, but it is usually otherwise when the disease appears under a severe type. Mild cases are slow in their action upon the heart, but, in the severer forms, the advance is rapid, and disease of the heart succeeds almost immediately after the first appearance of the articular symptoms. In chronic cases, the progress of the cardiac affections is slow, and an individual not well acquainted with the disease might be deceived as to the fact of its existence.

We have thus traced two forms of the disease, and I propose bringing under your notice two cases now under treatment in the Philadelphia hospital, to exemplify them.

The first is that of John Robb, who was admitted into the ward No. 2, on the 11th of April. Previous to his admission, he had been ill but a short time, being an inmate of the Alms-House, he was able to resort to medical assistance, quite as soon as is usual in private practice. He had been working on the farm of the establishment for eight months previous to his attack, and had enjoyed good health. On the morning of the sixth, he complained of slight pains in his shoulder, but continued at work; at eleven, P. M., he was taken with severe pain in the hip, which lasted four or five hours, and then, diminishing in the hip, went to the knee. On the seventh it ceased in the right knee and went to the left.

Now, from the character of the affection, thus shown, we can, without going farther, make our diagnosis. I allude to its metastatic character, as exhibited in its leaving one joint and settling in another. This is distinctive of rheumatism.

There was no pain in the ankles, but there was slight pain near the toe. You here mark the course of the disease onwards; it has reached the toe, and, showed a disposition to attack the foot. There had been pain in the right wrist, from an hour before the man's entrance into the hospital. On the ninth and tenth, he had pain in the breast, which he re-

ferred to a spot below the præcordia, in the region of the diaphragm, and which lasted twenty-four hours and was increased by coughing. Such pain is usually owing to disease of the heart, which may be merely muscular, but is more frequently caused by inflammation of the serous membranes, lining or covering the heart.

This man had been exposed to no causes of disease, other than those which he was in the habit of encountering. He had, it is true, been wet while working on the farm, but this was not uncommon with him; he had been long accustomed to working in the rain. This shows how cautious we should be in admitting causes of disease; some physicians might be disposed to attribute the attack of rheumatism to the last wetting, which could manifestly exercise no greater influence upon the man than a series of previous exposures to the same cause, of no recent standing. I look upon the particular season of the year, as the immediate excitant of the disease, and it is for this reason, that I have thought it a fitting subject to bring before you, at the opening of my course. If you take the trouble to inquire, you will find, that at this time the prevalence of rheumatisms and rheumatic pains is remarkable.

The case before you being of an acute character, its previous history is not nearly so important as the present state of the individual. It is otherwise in chronic affections, in which the whole anterior history is all-important.

The condition of the patient, at the time of his admission on the eleventh, was as follows. The face was slightly flushed, and presented an expression of pain. This pain, in acute rheumatism, is remarkable; it usually prevents all exercise and confines the patient to bed.

There was slight soreness in the shoulder, but without swelling or heat; no pain or swelling in the left arm, slight soreness in the right elbow and severe pain, swelling and heat in the wrist. The same pain, swelling, and heat extended to all the joints of the hand and fingers, excepting the thumb. There was some pain in both knees, especially in the left; none in the ankles; a little in the right hip, no tenderness of the spine, no cephalalgia; tenderness on pressure along the region of the ribs; this was probably the remains of the diaphragmatic pleurisy. The impulse of the heart was feeble, the second sound nearly lost, the first much roughened, a dulness on percussion nearly natural. Treatment, one grain of opium every four hours. The digestive organs were healthy.

Now, let us analyze this case. The first fact worth recollecting, is the absence of tenderness of the spine. This establishes the diagnosis between rheumatism and neuralgia. Hence, the mode of treatment which proves so excellent in the latter affection, may here fail. The state of the heart indicated merely slight valvular disease, and some muscular impediment; there was no effusion, the dulness on percussion being natural, and no creaking sound being heard.

The treatment in this case was after a plan of practice in New England, from which quarter it has been lately strongly recommended; the internal administration of opiates, pushed till felt by the patient.

During the twelfth, six grain pills of opium were exhibited, but there was no diminution of pain. Neither sleep nor cephalalgia had been induced by the opium. This is an important therapeutic point, demonstrating the antagonising action which pain exerts in regard to the effects of opium. The first sound of the heart was still rough, but the impulse rather less; no increase of flatness. The state of the heart was, therefore, slightly improved. Pulse eighty-four, of moderate size and regular; a grain of opium was ordered every two hours, and a laxative enema administered.

On the evening of this day, there was some cephalalgia, although no deviation of the pupils from the natural state. The dose of opium was diminished to a grain every three hours. Sleep was interrupted by twinges of pain; sweating at night. Eruption of sudamina; pulse seventy-two; pain in right arm increased and extending to the shoulder. Less pain and swelling in the knees, but increase of both in the feet. The action of the heart was more regular and feeble, and the sound less rough. The disease, you perceive, was not in any manner arrested, although you note a decided improvement in the condition of the heart. There was costiveness from the opium, but this, you will soon see, disappeared. Same prescription of opium continued during the thirteenth; hop poultices to most of the painful joints; laxative enema.

On the fourteenth, the pain having diminished throughout the right arm, began in the left hand and wrist. Here is another point of interest; the translation of the pain from the right to the left limb by metastasis. This is a common thing in articular rheumatism, and, as in this case, the pain does not usually quite cease in one joint, before it begins in the other.

There was slight pain between the shoulders, and diminution of the pain in the knees and feet; pulse seventy-six, fuller and regular; this is somewhat an exception to its usual condition in the disease, it being frequent, small, and quick. Skin warm and dry; sleep very irregular; tongue moist, with a yellowish coat; appetite bad; thirst; three or four stools since the enema; the opium had, therefore, induced no costiveness. No cephalalgia or dizziness; slight flush; eyes natural. Opium continued, hop poultice and laudanum to the left wrist.

On the fifteenth, the left hand was worse, and there was pain in the sole of the right foot. The other pains were better, moisture rather than sweating. Opium continued.

The sixteenth, less expression of pain, and less flush; soreness in both shoulders, with slight swelling, but not much constant pain. Slight soreness of the left elbow; much swelling, pain, and heat of the left hand; right hand nearly free from swelling, still slightly painful, but motion returned; pains much diminished in the legs; pain at the ensiform cartilage; palpitations frequent after slight exertions; pulse seventy-two, and soft; decided roughness, almost rasping, in the first sound of the heart, which was not very loud, and heard most distinctly to the left of the nipple, second sound nearly lost. Under the sternum, both sounds of the right side distinctly heard and clear, the first only a little roughened. The præcordial dulness commenced only at the left margin of the sternum,

and extended to the nipple. The morbid alteration was therefore confined to the left side of the heart, implicating the valves; there was besides effusion into the pericardium. The opium pills were continued during yesterday and last night every three hours. Hop poultices.

Last night, the pupils were somewhat contracted, and little sensible to the light. To-day, the face was flushed, and presented an expression of stupor. Disposition to sleep; pupils rather large; no cephalalgia; sleep interrupted by pain, shooting from the swollen joints. Pulse eighty-eight—softer. Swelling less marked in the left hand. Slight swelling and pain in both knees. No pain in the breast. Impulse of the heart almost lost; both sounds very feeble, without roughness. The disease of the valves is therefore diminished. Percussion slightly dull, at the upper portion of the left side; flat, down from the third rib to the same extent as yesterday. Prominence obviously increased. These latter signs are explained by the increased effusion into the pericardium. Still slight diarrhoea; three or four stools in the twenty-four hours. Skin moist, without swelling. A grain of opium every four hours.

This case, gentlemen, of acute disease of the heart, occurring in articular rheumatism, may serve as a type of the affection, which I shall now make the subject of some general remarks, and have occasion to refer to hereafter. There are several peculiarities to be alluded to. In the first place, the changeable character of the affection, shifting, as you have seen it, from joint to joint, denotes the nature of the disease. This is well understood, and universally admitted. But I would have you remark, that there was no *metastasis* to the heart. The disease of the heart appeared, during the most acute stage of the rheumatic fever, which afterwards continued with unabated severity. By physical examination, we ascertained that the pain in the præcordial region proceeded, first, from disease of the valves, indicated by the roughness of the sound; secondly, from effusion, shown by the unnatural dullness on percussion, imperfect action of the heart, &c.

Another symptom to be noticed, is the sweating, which was very slight from the first or second day, although it is generally very severe in acute rheumatism. It is this sweating in rheumatism, which has suggested the employment of Dover's powder, and other sudorifics, in its treatment. In this case, opium was alone resorted to, to afford a better test of the powers of the remedy.

The diarrhoea is another feature worth remarking, co-existing, as it did, with the large doses of opium. It was a purely accidental complication, but its occurrence demonstrates that opium, in very large doses, does not produce the same effects as in ordinary doses, thus illustrating a therapeutic law, that remedies, in over doses, do not act upon the system in the same manner, as when administered in the usual quantities. Were it not for this law, patients would die from the action of certain remedies now frequently prescribed. How could tartar emetic be given in the high doses required by the contra-stimulant practice, in pneumonia, or calomel, as it is prescribed in the diseases of certain sections of our country?

The pathology of the disease under consideration is still very obscure, although its symptoms are well understood. How much of the disease is like neuralgia, or connected with an affection of the nervous system, and how much belongs to local inflammation, are points that are still unsettled. It is, in this respect, analogous to whooping-cough, and some other diseases. We are just as much in the dark, as to effectual curative means for arresting the progress of the affection, though we have any number of palliatives. For the present, I refrain from expressing an opinion as to the pathology of rheumatism, but shall consider it partly as nervous and partly as inflammatory in its character. Certain inflammation of internal organs which occur in rheumatism, such as pericarditis, lose this doubtful character, and become decided phlegmasiæ; they are accordingly treated without reference to the disease of the joints. When the complication of pericarditis proves fatal, and the opportunity, otherwise rare, of examining persons who die with rheumatism, is obtained, there is almost a total absence of lesion in the joints; but the pericarditis offers the same characteristic appearances, as if it had been induced by exposure to cold, or injury, or some other ordinary cause. The affection of the joints depends so much on a nervous cause, that it presents very slight traces of inflammation. It never terminates in suppuration, or the other usual terminations of inflammation. Dr. Chomel states, that pus is not found in rheumatic joints; the very rare cases in which it is met with, he considers to be mere accidental complications. This opinion, if somewhat modified, is probably the correct one; that is, rheumatic differs from ordinary inflammation in the absence of pus, and its want of fixedness of position. Not so with the accompanying internal inflammations; they result in the secretion of pus, and effusion of lymph, and are fixed in their locations.

If the pathology of the disease is obscure, equally so are the therapeutics, it being more than doubtful that we possess any exclusive available method of treatment. This subject is very clear, no doubt, to some authors; but, unfortunately, practitioners generally are in the dark. Thus Bouillaud, who regards the affection as merely inflammatory, depletes to the utmost possible extent; and for this exaggerated depletory practice claims great success. His success may have been great, but others who have followed the practice, perhaps without the same enthusiastic confidence, have not been so fortunate. I have given the practice a very fair trial, with every disposition to see it succeed, and, although I have afforded relief by one or two moderate bleedings, if persisted in, the result was unfavorable; if pericarditis was present, it was only partially relieved, while the rheumatic affection of the muscular substance of the heart always increased. We thus merely return to the old practice of one or two bleedings at the commencement of the affection; a practice, the utility of which is sanctioned by long experience.

Another practice, originating, I believe, in New England, and recommended by Dr. Webb, of Providence, is that which has been followed in the present case—consisting in the administration of very large doses of opium. I have tried it in two cases, in both of which it failed. It succeeded

in stupifying the patient, and rendered him less sensible of pain, but produced no decided impression on the disease. It did not prevent the change of place, nor did it remove the pain or swelling. These symptoms persisted, and retained their usual mutability of character. Last summer, I pushed the remedy to such an extent as to induce decided narcotism, yet I failed to cut short the disease. The remedy may occasionally obtain the success which is claimed for it, but it is clearly no specific.

Sudorifics are the treatment adopted by some, from a notion that artificial sweating is but an imitation of the curative process of nature. This is certainly not the case; for the sweating is most profuse, while the violence of the disease is persisting. If, however, this discharge be suppressed, from cold or any other cause, it will be proper to resort to sudorifics, to revive this natural secretion, and restore to the patient what he has been deprived of.

Other remedies have been recommended, as narcotics and purgatives, particularly the colchicum, and, what is analogous to it, the veratria. The colchicum is used in this country and in England, but is not much employed in France. It is very useful as a palliative, though far from being absolutely curative. I have seen it stop the severer symptoms of the disease, for as much as five or six successive days. I use it at the hospital, in an uncombined form, preferring, as I do, the administration of simple remedies, particularly in hospital practice, to ensure their accuracy of administration, and to enable us to judge of their effects. By giving the wine of the roots or seeds, alone, we may avoid the severe purgation resulting from Scudamore's mixture. Purgings may be of service, if the patient can readily bear the motion necessary for the evacuation of the bowels. But the disadvantage, attending frequent rising, is apt to more than destroy the good, arising from the revulsive effects of the purging. In medicine, as well as in surgery, inflamed parts must be kept at rest.

These views, as to the effects of remedial agents in rheumatism, differ but little from those of Dr. Chomel, who, perhaps, has more than a due share of scepticism, in relation to therapeutics. It is true, however, that, when diseases, after running a certain course, get well of themselves, they are apt to deceive us as to the value of the remedies employed in treating them. This, I think, is the case with Drs. Bouillaud and Webb. For the opinions of the former of these physicians on this subject, I refer you to the Select Medical Library; and for Dr. Webb's, to the Boston Medical and Surgical Journal, for last year.

I am not disposed to enter into a history of all the different sorts of medications, which have been recommended in rheumatism. Of external applications, cups to the spine, as a counter-irritant, is a most valuable palliative; and, if the neuralgic element of the disease predominates, cupping along the spine will sometime produce a real arrest of rheumatism. But, when the joints are the principal seat of the disease, in most cases much is not to be expected from cups or leeches to the spine; they do better near the joints. Other applications to the parts are directed for the benefit

of moisture and warmth. For this purpose, anodyne poultices are useful; none are better than one of hops, steeped in hot water, or vinegar and water, sprinkled with a little laudanum. These are very convenient applications, but cannot be accommodated to all the joints. Opiate frictions may be used, as with a mixture of warm oil and laudanum. I refrain from lead-water, or spirituous, or other stimulating embrocations, as the danger of the internal affections, endocarditis, or pericarditis, is somewhat increased by driving the affection from the joint. This practice must be reserved for the sub-acute variety of the disease.

Other local applications of a soothing character may be resorted to, such as the experience of every practitioner will suggest. In the North, there are other remedies, the virtues of which are much extolled, such as the green hellebore, *actæa racemosa*, &c. These plants have been tried here, but without the success which is claimed for them. This want of success may depend on our obtaining them only in the dry state, in which their virtues are impaired. But I cannot believe that this is the sole cause of failure; for the most decided action of the remedies will sometimes be produced, without curing the disease.

Though not immediately dangerous, few affections are ultimately more mischievous than acute rheumatism. Diseases of the heart are so apt to originate with it, and to continue after its cessation, that we must hail any plan of treatment, likely to exercise a curative influence over it. I have therefore tested the opiate practice, as the last which has been recommended, watching very carefully its effects. I certainly pushed it as far as was prudent; I was not warranted in giving more than one grain every two hours, particularly, as I could not see the patient after each dose, a precaution which is always advisable when giving high doses of opium.

In other cases of the disease, I am willing to try other modes of treatment, which are highly recommended, although I fear that they are all merely palliative, and as such only may do good; at last, we may find some one more efficacious than the others. I am doubtful as to immediate success, though strong in hope. I cannot help agreeing with Chomel, sceptical as he is generally, in believing inflammatory rheumatism an affection not to be cut short by remedies, after having seen so much protracted suffering from it; even in the case of physicians, who were treated under the most favorable circumstances, it has been prolonged to four or five weeks and upwards.

What is the natural duration of acute rheumatism? It is not precisely fixed, but is scarcely ever less than two weeks, and may last for five or six months; at least, the immediate effects may continue so long. Like most diseases, that run a determined course, it averages two or three weeks.

Of the second patient, whom I mentioned, my time will allow me to say little or nothing. He offers signs of disease of the heart, different from the last, chronic dilatation and slight hypertrophy, without disease of the valves, the sounds not being at all roughened. There is effusion into the pericardium, indicated by the increased dullness or percussion. Further details I reserve for another occasion.

CLINICAL REPORTS.

PENNSYLVANIA HOSPITAL.

[Reported by HENRY H. SMITH, M. D., resident Surgeon.]

Case of Compound Ununited Fracture of the Humerus.

JOHN D——, aged 30 years, a farmer in the interior of Pennsylvania, was run over by a loaded wagon on the 29th of May, 1837; the wheel passed across the arm, fracturing the humerus very obliquely, and bruising the soft parts to a considerable extent; a tight bandage was applied several hours after by a quack, and kept on for three days, when he was induced to go some distance to consult a physician, who cut the bandages off and applied poultices to the arm for a week. At the end of this time, a portion of the integuments around the fracture were removed, owing to mortification. This made a wound of an inch and a half in diameter, through which the ends of the bone projected; the arm was placed in a sling without splints, and ordered to be kept quiet. In this state the man remained until the middle of July, when he determined to visit the city, and was admitted into the hospital on the 10th of August, near ten weeks after the accident. A wound, the size of a dollar, existed at the point of fracture, through which the lower fragments, free of periosteum, for one inch projected; no union of the bone had taken place, although much callus was thrown out around it. The elbow was partially ankylosed, and he was unable to move the arm at all; a poultice was at once applied to the wound, a rectangular splint placed on the inside, two straight splints from the elbow to the shoulder, on the back and outside of the humerus.

August 13th. Arm easy, slight discharge from the wound. Upon seizing the projecting piece of bone with the forceps, it was easy to move the lower end of the humerus near the joint.

August 16th. Upon a consultation it was determined to await the exfoliation of the projecting portion of the bone, continue the treatment, varying the angle of the splint, and making motion at the elbow every other day. This treatment was persevered in until September 10th, the bone and wound being occasionally touched with lunar caustic, and repeated efforts being made to remove the bone with the forceps.

September 15th. Bone becoming loose; hardness around the wound disappearing.

September 29th. Nearly four months after the injury, an inch and a half of the shaft of the humerus was removed by the forceps; some union at the fracture; partial ankylosis of the elbow. The wound was dressed with cerate, and an angular splint applied to the front of the arm, with three straight splints from the elbow up.

October 16th. Wound healing, fracture tolerably firm, motion at the elbow much increased.

October 30th. Another small piece of the bone was removed to-day; the wound is still somewhat open, motion improving.

November 22d. The same treatment has been pursued since last date; another small piece of bone removed.

November 25th. Wound healed; arm straight

and firm, with nearly perfect motion at the elbow; the wrist and fingers entirely free from stiffness. The patient is, however, unable to bring the fore arm near to the arm, on account of the adhesion of the biceps, &c. to the humerus.

November 27th, 1837. Seventy-seven days after admission, the man was discharged, being able to carry a considerable weight in his hand.

Case of Varicose Vein, cured by means of needles introduced through the Veins, after the method proposed by Daval.

George K——, a German, aged 57 years, was admitted into the wards on the 19th of July, 1837, for varicose veins, from which he had suffered for several months. He had had a large ulcer caused by the veins, for which he had been treated in the city by bandages, &c. The ulcer was much reduced in size when he entered, and, after appropriate treatment, healed. On the 12th of August, Dr. NORRIS introduced two acupuncture needles, one behind the vein, and the other through and through it in a line oblique to its axis, and surrounded both by a figure of eight ligatures. Little pain was caused by the operation; the limb was then elevated in a fracture-box; lead water cloths applied, and the antiphlogistic treatment directed.

August 15th. The patient complains of no pain, little inflammation has occurred; ligature tightened and treatment continued.

August 17th. Slight inflammation at the sutures—same treatment.

August 19th. The needles and ligatures were removed, some inflammation around the part, but none to any distance above or below.

August 24th. Inflammation increased; slight ulceration at the points where the needles entered; a poultice to the part, and antiphlogistic treatment continued.

September 4th. The ulcers have healed; the vein perfectly obstructed; bandages and compress applied along the course of the vein.

September 7th. Allowed to walk about; has slight porriginous eruption; treated accordingly.

September 15th. Vein obliterated entirely; patient walks without feeling any inconvenience from it.

September 17th. Discharged—entirely well.

Within a few weeks the patient was seen, having had no return of his complaint, and continuing constantly at work.

Case of Rupture of the Larynx, from a blow on the Pomum Adami, cured in two weeks.

F. N——, aged 45 years, a watchman, whilst attempting to arrest a man in the neighborhood of the river, on the night of the 19th of October, 1837, was knocked down and struck on the throat by a large piece of coal. He was seen immediately by a physician, who found him nearly strangled, unable to speak, and with constant spasm, whenever he attempted to speak or swallow. He was bled freely, and sent to the hospital, eighteen hours after the accident.

October 20th. The throat much swelled, and inflamed externally; fauces slightly reddened; aphonia complete; breathing stertorous; barely

able to whisper, and swallows with great difficulty. The cartilages of the larynx are loose and crepitant, the *thyroid* separated and moveable, one on the other. Examination of the larynx causes violent gagging; ordered sixty leeches to the outside of the throat, and warm cloths afterwards, to promote the bleeding. Gruel and tea for diet.

October 21st. Rested well; voice somewhat stronger; less pain in the throat; swallows rather better; ordered the same number of leeches; injection to bowels, and other treatment continued.

October 23d. Voice quite audible, though very hoarse; swallows well; no pain on slight pressure on the larynx; sitting up in bed; has swallowed but little since his admission. Ordered weak broth for diet.

October 24th. Voice gradually returning; ordered blister to the throat, to be followed by a poultice.

October 26th. Walking about; union of cartilages quite firm; voice improving; blister repeated; treatment continued; brown mixture for cough, which troubles him slightly.

October 28th. Voice nearly well, though hoarse; swallows as well as ever; cartilages united entirely.

November 4th. Patient discharged; voice strong; no motion in the cartilages; slight hoarseness.

December 15th. The patient was seen to-day; he is able to attend to his duties; speaks clearly; but is unable to call the hour, without some difficulty; has been free from pain since he was discharged.

Case of Dislocated Clavicle, cured in twenty-two days, with deformity.

Michael M—, labourer, aged 35, fell, in going down stairs, on the 27th of October, 1837, and struck the extremity of the shoulder. He, however, took little notice of it until the 30th, when, becoming alarmed at the continued stiffness, he consulted a physician; by him it was mistaken for dislocation of the humerus, and sent to the hospital to be reduced. The shoulder was flattened, and apparently hollow near the clavicle, owing to the projection of its scapular extremity; but the rotundity of the shoulder was easily restored by forcing the humerus upwards. He was dressed with the apparatus for fractured clavicle, (mentioned in a previous number,) and placed in bed. As long as he continued perfectly at rest, it remained reduced, but the least motion forced it out again. He was therefore dressed with Desault's bandage, and a large compress over the end of the clavicle; but this did not answer much better; so that, after being confined for some days, all was removed except the sling, the patient being exceedingly restless. In this way, he was allowed to walk, and on the 26th of November was discharged, having the entire use of the arm, although the clavicle still projected a little over the shoulder joint.

Amputation of the Thigh, for Caries of the Knee Joint, by THOMAS HARRIS, M. D.

Peter C—, aged 22, a shoemaker by trade, was admitted into the house in the winter of 1836, for an injury to his knee from a fall. He had had pain in it for some months previous, but not so as

to prevent his attending to his work. After staying in the house about six weeks, he was enabled to resume his work. On the 20th of December, 1837, he was re-admitted, the knee much swollen, and the bones carious, a probe passing readily into the joint. He was put under an alterative treatment, his general health being bad. The limb was placed in a carved splint, and kept at perfect rest. The disease, however, progressed; his constitution was suffering severely, and, upon a consultation, amputation was determined upon.

February 28th, 1838. Dr. HARRIS performed the common circular operation on the thigh—present, Drs. Randolph and Norris. The usual dressings were applied, and the wound healed almost entirely in three weeks. During the cure, the patient was affected with violent neuralgia of the stump, which was relieved by the free use of anodynes. Dissection of the knee showed the cartilages almost removed by ulceration, the head of the tibia diseased, and the condyles of the femur bare.

List of Accidents, admitted into the Pennsylvania Hospital, from April 4th to April 18th, 1838.

One case of badly lacerated wound of the scalp, caused by a fall from a carriage; dressed with adhesive plaster; was attacked on the third day with erysipelas, and sloughed; sloughing since ceased, and wound is at present closing by granulation. One case of fracture of the skull, conjoined with fracture of both fore arms, caused by a fall from the rigging of a vessel—died in five days from meningitis. One case of injury from blasting. The face was badly burnt, eyes filled with sand, particles of which had penetrated the cornea. The left humerus was broken above the condyles, the olecranon fractured, and a portion of it removed previous to admission. The joint was so much injured that amputation was performed eighteen hours after his entrance. The arm is doing well, inflammation of the eyes much reduced, and burns healing. One case of fractured clavicle—dressed with the usual apparatus, and doing well. One case of contusion of the abdomen, and strain, followed by orchitis. Leeches were applied to the testicle, and the patient kept on his back with warm cloths to the abdomen—almost cured. One case of punctured wound of the leg, just below the knee joint, caused by a fall on a nail; dressed with fracture box and poultice—purged, and doing well. One case of extensive burn, in a woman eight months gone with child—caused by her clothes taking fire. The *whole body and extremities*, with the exception of the legs, from the knee down, were burnt to a crisp. Dressed with hot poultices, and bottles of hot water to the feet—hot brandy and water every half hour. Labour came on, but the patient died three hours after admission. The Caesarean section was performed by Dr. Randolph, within a few minutes after death; but the child was found dead. One case of lacerated finger, from an injury by a rail-road car—dressed with simple dressing and a splint.

The case of fractured fibula, reported in the last, was cured in twenty-three days—no deformity. The gun-shot wound of the elbow has been twice attacked by erysipelas, and sloughed extensively—at present under treatment.